

**ABSTRACT**

A bone implant (10) is implanted in a pre-given or created cavity parallel to an implant axis (I) and without substantial rotation. The implant comprises on the implant portion to be implanted cutting edges (14), which do not extend in a common plane with the implant axis and are facing toward the distal end of the implant. The implant further comprises surface ranges (16) of a material which is liquefiable by mechanical oscillations. The cutting edges (14) are dimensioned in such a manner that they are lodged in the cavity wall after implantation. For the implantation, the implant is impinged with mechanical oscillations, resulting in the thermoplastic material being at least partially liquefied and pressed into unevennesses and pores of the cavity wall. There it forms a form-fit and/or material-fit connection between implant (10) and cavity wall, when re-solidified. The cutting edges (14) anchor the implant in the cavity wall, in a manner similar to the anchoring of a screw-shaped implant. As the implantation does not require any rotation, the implant may have a shape which is neither circular-cylindrical nor circular-conical. Thus it is better stabilized against torsional loads than the screw-like implant. The stability of the implant is further improved by its anchoring through the liquefiable material, in particular against loads pulling the implant out of the cavity. Due to the stabilization through the liquefiable material, the implant can be loaded immediately after implantation. The implant is e.g. a dental implant.

(Fig. 3)